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$${}^5A \times {}_{\overline{5}|}33 = 17.9287 \times .06274 = 1.124846$$

$$.05758$$

$${}_{\overline{5}|}A - {}_{\overline{5}|}AB + {}^5A \times {}_{\overline{5}|}33 = 1.182426$$

$$\text{Annual premium} = \frac{1.182426}{1 + {}_{\overline{4}|}AB} = \frac{1.182426}{4.588} = .25772 \text{ for } \text{£}100 \text{ per}$$

annum. Premium in one sum, £118. 4s. 10d., or £25. 15s. 5d. annually.

FORMULA FOR AN APPROXIMATE VALUE OF ANNUITIES AT SIMPLE INTEREST.

To the Editor of the Assurance Magazine.

SIR,—In looking over some old letters, I found one, dated some years back, from Professor De Morgan, in which he gives the following elegant approximation to the value of $\frac{1}{1+r} + \frac{1}{1+2r} + \frac{1}{1+3r} + \dots + \frac{1}{1+nr}$.

He says the best approximation is

$$\frac{2.3205851}{r} \cdot \log. \frac{1+nr}{1+r} + \frac{1}{2} \left(\frac{1}{1+r} + \frac{1}{1+nr} \right) + \frac{r}{12} \left(\frac{1}{(1+r)^2} - \frac{1}{(1+nr)^2} \right) - \frac{r^3}{120} \left(\frac{1}{(1+r)^4} - \frac{1}{(1+nr)^4} \right);$$

error only in the sixth decimal when $r=.1$, or interest at 10 per cent.,

$$\frac{1}{1.1} + \frac{1}{1.2} + \frac{1}{1.3} + \dots + \frac{1}{2.0}.$$

Approximation	.	.	.	.	.	6.687715
Truth	.	.	.	.	.	6.687714

I am, Sir,

Your obedient Servant,

PETER HARDY.

London Assurance, March 10, 1855.

NOTICES OF NEW WORKS.

On the Loans raised by Mr. Pitt during the first French war, 1793—1801, with some Statements in Defence of the Methods of Funding employed. By WILLIAM NEWMARCH, one of the Honorary Secretaries of the Statistical Society. Effingham Wilson, Royal Exchange; Harrison, 59, Pall Mall; and Nissen and Parker, 43, Mark Lane.

WE had occasion some time back (*see* Vol. IV., page 78) to call the attention of our readers to an essay by this gentleman, "On the new supplies of gold," and to express an opinion of its value and importance to all en-

gaged in inquiries on such subjects; and it is with pleasure that we meet him again in a wholly different arena, but in one which, judging from the specimen before us, the writer is peculiarly qualified to excel. The almost universal condemnation of the financial policy of Mr. Pitt, so far as it was exhibited in the contraction of loans, seems to have stimulated Mr. Newmarch to investigate its real character; and it must be no doubt a pleasing reward for the laborious diligence devoted to the inquiry, that he is enabled not only to stem the tide of censure which has so long set in against that celebrated minister, but to demonstrate that the measures taken by him for raising supplies during the perilous times of his administration were really the best that could have been adopted, whether looked at in a theoretical or practical point of view. The arguments brought forward by Mr. Newmarch in support of his propositions are backed by a remarkable amount of statistical evidence, drawn from sources which probably few beside himself would have traced with equal success, and the origin of which he is always careful distinctly to indicate. Considering the circumstances in which the country is placed at the present time, and the many points of resemblance between its position now and at the period of which Mr. Newmarch treats, nothing could be more opportune than the appearance of such a publication, or be better calculated to assist the Government in its deliberations as to the best means of discharging the balance of the enormous expenditure already incurred, and of providing for the still more formidable addition to its burdens which there is every reason to anticipate the nation will be unhappily compelled to submit to.

A Treatise on the Enfranchisement and Improvement of Copyhold, Life-Leasehold, and Church Property; with Rules and Tables for the formation of Copyhold Enfranchisement and Freehold Land Societies, and a Mathematical Appendix. By ARTHUR SCRATCHLEY, M.A., F.R.A.S. Third Edition, enlarged. Charles Mitchell, 12, Red Lion Court, Fleet Street.

THIS publication, the author says in his preface, "has for its object the development of a comprehensive system for the general enfranchisement and improvement of property held by copyhold or customary tenure. The main elements are the establishment of Copyhold Enfranchisement Societies and Freehold Land Societies, with the application of the life assurance principle." Mr. Scratchley has contrived to make his subject, which is necessarily a somewhat dry one, of more interest than ordinary, by an introduction in which he has collected some curious particulars in reference to the origin of manorial rights, and the extraordinary customs connected with them, prevailing even at the present day; and as regards the practical part of his treatise, it appears to contain all that persons seeking information in such matters can desire to have.

The Act of 17 and 18 Victoria, cap. 116, in relation to Church property, contains clauses of much importance, and introduces several improvements connected with the regulation of it—one, in particular (suggested, it seems, by Mr. Scratchley himself), prohibiting the use of the Northampton Table in any calculations thereafter to be made in reference to such property.
